

Cooking With Cardboard

Learn how
to build and use
your very own
Solar Cooker



* Includes: Recipes to help get you started *

By Jed Wubben

Cooking with Cardboard
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Red skies at night, Solar Cookers delight.

Red skies in the morning, Solar Cookers take warning. --- Jed W

To my Grandparents, Rae and Annabelle!

Thanks for opening my eyes to a whole new world!

Please read this first!

Warnings!!! & Important Things to Know!

1. Like with anything, solar cooking comes with risks. Solar cooking is no different than normal cooking, the food becomes hot and it can burn you!! Always wear the right clothes: sunglasses, gloves, oven apron, etc. Let me say that again: Always wear the right clothes: sunglasses, gloves, oven apron, etc. And always have a First-Aid kit handy!!
2. Your solar cooker is very reflective and will make the sun very bright. It will burn your eyes and give a bad sunburn. Always wear sunglasses and cover your skin when you are working with your solar cooker or solar cooking.
3. Just like when you are cooking normally, do not let children or animals play around the solar cooker. They could easily burn themselves with the hot food. Remind them that it's not a toy and people can get hurt if they are not careful around it.
4. Be mindful of where the solar cooker might focus its extra light. For example, I was solar cooking and I was just about setup my cooker when I saw that the extra light was point at the inside of my car. I decide to move the solar cooking away from the car and set it up else where. Why? The extra light would have heated the inside of the car. The inside of the car would reach very hot temperature very fast then it would ruin anything in it!
5. When you are solar cooking, find yourself some shade and drink plenty of water!! Heat stoke is a real thing and you must protect yourself from it.
6. If you feel you can not safely do anything in this book, please do not!!

How to use this book!

This book is put together with the hope that just about anyone can use it. I have added lots of photos and try to explain every step you need to do to start solar cooking. Also I add this short section to help you get out on the right foot. Here are some quick points to do just that:

1. Load the book into the ebook reader, sit in your easy chair, and just read it. Don't try anything. Trust me when you go to build your solar cooker or make one of the recipes, you will know what to do. Nothing is worse than trying to read a book and follow directions at the same time.
2. Do it with a friend or family! If you can do it find someone to help you built your solar cooker, it will make it more fun. Maybe make it a family event. Plus you might need extra set of hands then your building your solar cooker!
3. Don't be afraid to fail! Half baked cakes, crunchy beans, not fully cooked meats, burned vegetables is all part of the fun. You will figure out the different temperatures of your solar cooker as you go. The best way to do just is to go out and try out it. I also added a troubleshooting section, so if you run into problems I can show you some fixes to get your solar cooker right.
4. Don't relied on your solar cooker has the only way to cook food! Have a backup plan. Clouds happen, rain comes, and other problems. Be prepared or be hungry!
5. Have fun! Solar cooking as been done for bunch of years because it's fun and anyone can do it.

History & Little Know Facts

Who knew that sun's heat at one time was thought of as weapon for war? After a great bunch of reading (I needed something to do over the cold clouded winter), I learned that one of the first recording of the use of sun's heat was to destroyed enemy ships. A Greek inventor wanted to use mirrors to point the sun rays at their enemy wooden ships that would cause them to catch fire. Thankfully, the main interest today is to help mankind through things like cook food, charge batteries, and heat houses with the sun's heat.

Leading us back to solar cooking, the first recorded time of people using the sun to cook food was in 1767. A French-Swiss physicist by the name of Horace de Saussure found a way to keep his food and drinks hot with sun rays. With this thing he called a "Hot Box," it would only need sunlight to keep his food hot after he had cooked it. His idea of using the sun's rays was based on what was called a heat trap. Solar cooking today is still based on the idea of heat trap. If you look at any solar cookers, the main focus of sun's rays is to a heat trap. To picture what a Hot Box might look like, think of a little greenhouse that would be set out in the sun with food in it. Here a drawing of mine to give you an idea.



Moving into the 19th century, there were big breaks for solar cooking. The first one was in the 1950s. An M.I.T. scientist by Maria Telkes developed what we all call the classic solar oven box. This oven had an insulated box and four mirror reflectors to focus the sun's rays into the box (i.e. heat trap) in the middle. This discover lead people to try different ways to use solar cooking in their lives. Many different designs were tried which lead to the next big breakthrough for solar cooking.

In 1980, two women by the names of Barbara Kerr and Sherry Cole developed what most call a cardboard box cooker kit. These women saw the need for people to be able to cook their food without the high cost of cooking fuels. These women didn't stop there, they with the help of others started a nonprofit called Solar Cookers International to help spread the information about the better way to cook. Because these pioneering women, a different type of solar cooker was developed, "The panel cooker." The panel cooker use both the box oven design and parabolic cooker design to make a less expensive solar cooker. This breakthrough helped millions of people get their hands on a solar cooker. Today, people from all over the world use solar cookers from Solar Cooker's International to cook their food, make water clean to drink, and more.

There are three main types of solar cookers: the box oven, parabolic, and panel cooker. But enough history, let's build one for ourselves! Here a photo of the one looks like the one we are going to build, a "panel cooker." One note about the photo: I was cooking some great northern beans that day. They were yummy!



Just one thing to remember as you build your solar cooker and cook with it. To most it's more than just something to cook food. It's simple device the can spread peace, help feed the poor, make the world a clean place, and so much more. It doesn't matter your reason. All that matters is that you want to know how to solar cook and build your own. Keep reading and join the group of solar cookers! There no dues, just solar cooking fun, and yummy food!

Let's build a Solar Cooker!

You always want to get into solar cooking but you just never had the time or the right information to build one. You have looked at buying a commercial solar cooker but after looking at the price, it's sometimes a big investment. Well, never fear this book will help you get solar cooking and it will not cost that much to do. When I say this I talking from experience. I also want to solar cook but did not want to spend the \$50 to \$200 for a commercial solar cooker. I got bills like everyone else and every penny counts. Beside the cost, a few other problems came to mind. The more I look at those commercial solar cookers, they looked big, heavy, and easy to break. Plus, I didn't know if a solar cooker could really cook anything. I wanted to try it to see if it would work before I spend a lot of money.

This book will show you what I have done and how to build and cook with a simple solar cooker. All the parts should need will only cost you more or less \$20 (this include the price of the this book). Plus, it's so simple you could build a couple more if you wanted to, for say camping.

Because the focus is to get you solar cooking, I don't spend time explaining theories of solar cooking. I will just tell you what I know works, but if you are curious there is reference section in the back of this book to point you of other information about solar cooking.

Beginning with each section there is a list of things you will need to build your solar cooker. I normally list where I got them to make it easier for you to find them. On the same note, I encourage you to look at other places than where I have listed because you never know you might find a better place to buy the needed parts or the place I bought them may not carry it where you live. For example, instead of buying a cardboard box at Walmart, you find one that someone is trashing one and they give it to you (which is what I did!). Not only are you recycling but who can beat the price: free! Another example would be the jar to cook with. I list buying it at the local supermarket in their canning section. You could easily find the same jar at a garage sale or thrift store. Don't be afraid to look around.

To start we will build the shell for your solar cooker, foil it, and show you how to set it up to cook with it. Before you know it, you will be making solar cooking history for yourself with your own solar cooked food.

Building the Solar Cooker

Before you begin there are somethings you should know. This solar cooker will work as good as any of the other ones, plus you made it yourself. Because this solar cooker is cheap and easy to build you will not need to worry about ruining your solar cooker. Just build a new one and recycle the old one. Even if your first solar cooker does not get ruin there could be other reasons to build another one: build another one and give to a neighbor, have one solar cooker for each course of dinner, or have a back-up in case someone decides to use yours long term. Just remember you have add this book to your library, so feel free to build as many solar cookers as you would like. But I must warned you: Solar Cooking is fun and you may like to do all your cooking that way!

Solar Cooker Parts

All these price are from my local Wal-mart because Wal-mart's are everywhere. Thus giving you an idea of the price of supplies. Keep in mind that prices do change, so your Solar Cooker might cost a little more or a little less.

What you will need:

One roll of cheap 25 feet long and 12 inches wide of aluminum foil \$0.98

School Glue \$0.50

One 14 x14 x 14 Box \$0.72

One box of Cheap Binder Clips (you will only need 2 but they make you buy a box) \$1.92

Two 4 oz can that are 2 inches in height (I picked up two cheap Wal-mart brand Peppers on discount (\$0.44 each) \$0.88

Total of \$5.00!

Like I said before, you can make it cheaper by doing simple things. For example using a recycle box, Ask someone if they have extra binder clips you could have, buy some of the parts at the dollar store, look in your parents basement, whatever might help. Don't be afraid to shop around to find what fit your budget! After you have all the supplies, next thing to do is to build your solar cooker shell. Let's get started!

The Build!!

Things you will need: your materials to build your solar cooker, gloves (optional), a scissor, pens, markers, tape (any type), tape measure, a little brush (toothbrush works great), one or two bamboo skewers, and a little time!

Take you time and first read through the directions, when grab the box, and start building. If you do that, it will make it easier for you to work through the build.

The shell – The shell is what holds your foil in place to point the sun's heat at your food. In our case the shell is built out of cardboard. You could build it out of anything you would like. The reason cardboard is used is because it is cheap, light weight, and recyclable. Also it's very easy to work with. You only need a scissor to cut and shape it. Work through the step and you should have a shell for your solar cooker.



1. Take a good look at the box.



2. If you are using a recycle box clean off all the tape and labels first! This will make it easier when you glue the foil on the shell.



3. Find where the box is glue together.



4. Cut the box apart at this point. Do this by pushing the two pieces of cardboard apart from each other.



5. Your box should look like this after you have pull the box apart.



6. Find the extra flap from the side. See photo.



7. Using the scissor, cut the extra flap from the side of the box.



8. Lay the cardboard out flat and label each part like in the photo.



9. Using the scissor, cut the cardboard box between G and H. Free the part D, L, and H.



10. Take rest to the box and folding I and K in. Push J out. Put the box down as seen in the photo.



11. Take part D, L, and H (Or as I call it the tongue) and push it into the middle of the solar cooker shell.



12. Push the part middle part (the tongue) until J and D laying on top of each other.



13. Next take one of your binder clips and clip A and B together.



14. Take the other binder clip and clip B and C together.



15. Your shell is Finish! Now onto foiling.

Foiling

I know what you're thinking. This is a plan to stop evil guys from their plot. Close but not really. In our case, foiling means placing the aluminum foil on the cardboard shell that we have build. Let's get foiling!!



1. Take your solar cooker shell apart to start foiling it. Lay it out on a table or someplace flat and take a good look at the parts.



2. Get all your needed supplies and tools before you begin. Foil, scissor, gloves, glue, a little brush (toothbrush works great), and tape measure.



3. Before you begin, take a good look at your foil. You will notice the one side is shining than the other. This important because you want the shine side out. Your goal is glue the dull side to the cardboard.



4. To start, find a clean and flat place to roll out your foil. Roll the foil out, measure, and cut. You will need to cut eight pieces that are $14 \frac{1}{2}$ long from your roll of foil. When you are done each piece should measure: $14 \frac{1}{2} \times 12$ inches.



5. Tip: When measuring the foil, first measure the left side, then the middle, and last the right side leaving a little mark at each point. Then use the foil box to line up at the marks and draw a straight line for you to cut.





6. After you have your eight pieces of $14 \frac{1}{2}$ by 12, take three of those sheets and cut to make them each $14 \frac{1}{2}$ by 6 inches. You can do this by cut them in half, thus half of 12 is 6.



7. When, take one piece of $14 \frac{1}{2}$ long by 12 wide and cut it in 4ths. After they are cut the new size should be $14 \frac{1}{2}$ by 3 inches. Thus, 12 divided 3 is 4.



8. Now you have all the needed sheets to start foiling. You should have four sheets of $14 \frac{1}{2}$ by 12 inches, four of sheet of $14 \frac{1}{2}$ by 3 inches, and six sheet of $14 \frac{1}{2}$ by 6 inches.



9. Now let's start gluing the foil to the cardboard. Part D and J does not need to be foil. Some quick tips: Always spread the glue on the cardboard then lay the foil on top. This will make it easier to foil the cardboard. To make the glue easier to work with some suggest mixing in a little cup or pot 50/50 glue and water. It's your choice, do what works for you.

14 1/2 by 6	14 1/2 by 6	14 1/2 by 6	No Foil
14 1/2 by 12			
14 1/2 by 3			
14 1/2 by 6	No Foil	14 1/2 by 6	14 1/2 by 6

10. Here is a quick layout so you will know where each piece needs to go. A full size of this image is include in the back of this book!



11. To begin, start with I and K using the 14 ½ by 6 inch sheets. Take the tooth brush and spread the school glue evenly on one piece at a time. Before you lay the sheet of foil down on the glue and cardboard, make sure the shiny side of the foil is up and the other side (the dull side) is to be glued to the cardboard. This is important because we want the foil to be as shiny as it can be to pull as many of the sun rays as we can get. After the glue is evenly spread, lay the foil as center to the cardboard part as you can and leave one inch space on top. Then work the bubbles out but not too hard or you will tear the foil. Note that when you go to lay the foil on the cardboard you will have extra foil to the sides, this is normal. That extra foil will be used to bend over the side to the cardboard to hold the foil on even more. Repeat the same steps for foiling the bottom of E, F, and G with 14 ½ by 3 inch sheets but without the extra one of space on top. See photo.



12. Let the glue dry on the main part of your solar cooker and move on the parts D, H, and L. You should need one sheet of 14 ½ by 6 inch, 14 ½ by 3 inch, and 14 ½ by 12 sheet. Follow the same steps you did when you first started foiling. Remember: you do not need to foil D! Note: When foiling L leave a one inch of space that is not foiled on the top. See photo.

13. Move back to the main part of the solar cooker and finish gluing the foil on. Note: When foiling A, B, and C parts leave one inch of space that is not foiled. See photo.



Solar Cooking takes Patience



14. Wait for the glue to dry. Next we will do some quick last minute things to finish out your solar cooker, then setup your solar cooker, and do some cooking.

Finishing

Because nothing is perfect you will need to retouch a few things before you can use your solar cooker. Just remember this is true for anyone. So, don't worry because a little work now means more fun lately.



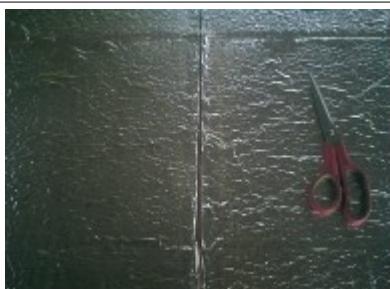
1. Get all your supplies: Glue, gloves, scissor, one or two bamboo skewers, and tape. First we will fix the inside folds where the box bends. One look and you will see that the foil does not sit flat. Even worse it will start to crunch around the edges ruining your solar cooker if you do not fix it.



2. Carefully pull up the edges with the bamboo skewer and flatten out the foil if needed. Take your scissor and cut the extra foil off so that it will just fit inside the crease of the box bend.



3. Next, take your school glue and run a small bead of glue just inside where you have your foil pull up. Not too much or it will be a mess.



4. Starting from the inside push the foil down flat, pushing the glue out. When you are done it should look like this.



-
5. We will bend over the extra foil to hold it on cardboard. Some believe that gluing it is the way to go. You can if you would like. I found to be a real mess. I use tape because it is easier to work with. It does not matter what kind or type of tape you uses. All you need it to do is hold the foil over and on the box.



6. Carefully fold the foil over the side of the cardboard. Then use the tape to hold it in place.



7. You're almost ready the start solar cooking. Just one more step, you will need to build a solar cooker tool! It's easy and the next step.

The Solar Cooker Tool

You have got your solar cooker build. It's shining in the sun and looks ready to cook your first meal. There is only one problem: how do you set it up to make it cook. This where you need a solar cooker tool to make your life easier. It works better than trying to explain all different angles so you can setup your solar cooker to cook right. This tool is important to line the flaps on the sides, and front, plus where to place the pan holder (4oz can) in the solar cooker.

Building Your Solar Cooker Tool

Now before you run to the hardware store with your credit card, you must know this tool is one you must build so you can't buy it anywhere. Don't worry, it's really easy to make, all you need is a piece of cardboard that must be at least 7 inches long and 3 1/2 inches wide, two markers (green and blue), a 12 inch ruler, scissor, and a little time. The piece of cardboard I used was 14×14, I had it left over from a different project. I am always trying to recycle. Let's begin!



1. Lay out all your supplies and tools. The piece of cardboard, two markers (green and blue), a 12 inch ruler, and scissor.



2. Mark off 7 inches on your piece of cardboard. Do this by marking off 7 inches with little dot all the way up the piece of cardboard.



3. Draw a straight line 7 inches long down the middle of the cardboard by follow all your little dots.



-
4. Next, mark off the 3 1/2 inches deep into the cardboard on top.



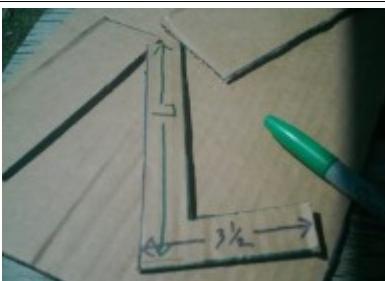
5. Take your ruler and mark 1 inch down from the top of the 7 inch mark



6. Next, place your ruler against the 7 inch mark you made and make a mark 6 inches long on the other side. You should have an "L"



7. Cut out the "L" with the scissor.



8. Mark it like the photo. 7 inch one way and 3 1/2 the other. Now your solar cooker tool is ready to go!



Why do your pots and pans need to black in color?

If you are like me you might be wondering why you need black pans, pots, and cooking jars to cook with solar. Normally, if I use the stove with gas or electric, all I need to do just place the pan on the heat and cook. But when you're cooking with solar, you're cooking with light. So to cook with solar you need a black (or a dark color) pot, pan, or cooking jars.

The real question is why? I mean a pan is a pan and pot is pot, right? So what is the difference because of color? The answer is really simple: black color materials absorbs entire wavelength spectrum of light and reflects none (or very little) of it back. Thus, you will get more heat from anything that is flat black in color. The more you move away from the color of solid flat black the less heat you will get from the sunlight (or light) because the color absorbs less of the wavelength spectrum of light and more of it will be reflected back. So, you could solar cook with a white pot or pan but would not work as efficiently as black pot or pan, thus more cooking time! You may not look at this as a problem but the best times to solar cook are between 10 am and 4 pm. That is a window of only six hours, some recipes may not be done in this time frame if you are not using a black colored pot, pan, or jar.

Now here are a quick list of the most common ways to make your pots, pans, and jars flat black for solar cooking:

1. Paint your pans, pots, and cooking jars a flat black. A lot of solar cookers suggest doing this. If you do this make sure you are using non-toxic paints (like flat black BBQ paint).
2. Buy pots and pans that are all ready black!
3. Or wrap your pans, pots, and cooking jars with a black cloth.

I like using number 3, which is what we do in this book. This way I can check the food without open the jar. I also can use the cloth on more than one jar and it make it easier to clean the jars after I am finish solar cooking. Let's get back to working on the solar cooker. We only have a couple of steps left: setting it up and start cooking your first meal. Oh! I see it from here. It's a dessert!!

How to use you Solar Cooker!

Let's get to the meat and potatoes of solar cooking. (Just for the record we are going to cook a dish I like to call "Peach Sol Dessert!" and not meat and potatoes.) If your don't know how to set-up your solar cooker and cook with it, then all you have is a piece of cardboard that makes the sun shiny. What good does it do for you! So what we are going to do here is I am going to walk you through a procedure on set-up, lining it up the sun, cooking, and breakdown and store your solar cooker. The first time might be crazy to do but after you have done it a couple of times, you will get the hang of it so don't worry, just take your time. Our goal here is to show you how to cook with a simple dish. After you learn the basic of using this solar cooker you can cook anything you want with your solar cooker. Get your solar cooker out and let's make Sol Peach Dessert!

Peach Sol Dessert

What you will need to cook with:

One mason jar and ring pint size	\$1.00 from the canning section of your supermarket
A black cloth big enough to cover the whole jar	\$.50 black shirt from a thrift shop, cut it so you have piece to fit over the jar
One oven bag	Comes in a box of 2 @ \$2.18 at Wal-mart
	Total : \$4.18

Ingredients for your Peach Sol Dessert:

One peach

Sugar and Cinnamon

Optional:

Yogurt, or slice of bread, or maybe a tortilla

Preparing Sol Peach Dessert to be cooked! – Get everything you will use out to start: one peach, sugar and cinnamon, one mason jar and ring pint size, a black cloth big enough to cover the whole jar, one oven bag, scissor, a marker, and a common pin.



1. Take the peach and cut it up into little bite size pieces. Lay these pieces out on a plate and sprinkle as much cinnamon and sugar over top of them you would like. Take the pieces and place them in the mason jar.



2. Cut a small piece from the top of the oven bag to fit over the top of the jar. The goal is to use the piece of oven bag has a lid. Place the small piece of oven bag over jar the top. Screw the ring down on the jar. Take the marker and make a dot on the top of the piece of oven bag (like what you see in the photo). Next, take a pin and poke one hole on the top of your oven bag lid in the middle of the dot.



3. Next take the black cloth and rap it around the whole jar so that you could not see the jar at all.
4. Place the jar inside the oven bag and tie the top closed.



The set-up!

Now we need to set-up your solar cooker. If you have not put your solar cooker away, go ahead and jump to **Dialing in Your Solar Cooker section**. For the rest: first thing is first: now put on your sunglasses to protect your eyes and let's setup your solar cooker.



1. Make sure your solar cooker's glue is dry, then you will be ready to start solar cooking. Lay all the pieces out so you can look at them.



2. Next, lay out the main part of the solar cooker, shining side up and bottom facing you, on flat area like a table. Take the middle section and lay over the center of the solar cooker. Pull up the middle flap to check if the two letters D and J are like the photo.



3. Lay the middle flat like the photo



4. Fold the two sides up. Leaving the middle still flat.



5. Set the box up. Pushing the middle out. D and J should still be on top of each other.



6. Place the solar cooker where you plan the cook and put the binding clips on the top to hold the top flaps together. Make sure the area is flat and free of little rocks.

Dialing in Your Solar Cooker section

If your solar cooker is setup and you're ready to cook, you need to find the sun and dial in the flaps in to insure that the food you're trying to cook is getting the maximum amount of light. It's really easy to do. Make sure your sunglasses are on to protect your eyes. Grab your solar cooker tool and let's get to work.



1. Finding the sun is your first step! This may sound funny but it can be hard to do. The simple way is to look at the shadow you're making. The sun is always directly on the other side of the shadow. The way I do it is to stand and look for the shadow behind the solar cooker. Move the solar cooker to the right or left so the shadow covers the back of it and the corners look equal. Then you have your solar cooker pointed at the sun.



2. It's time to adjust flaps to get maximum sun. Starting with the left flap use your solar cooker tool to find out how far out (or in) they should be. The goal is to focus the flaps so the rays will be directed to the middle of the cooker. Take the solar cooker tool and push (or pull) the flap out to measure it. When you have it right, the solar cooker tool should fit between the middle flap and the side flap. See photo!



3. Next check the right flap. You are doing the same thing just doing it on the right side of the solar cooker. See photo.



4. Next you will need to find out where you need to place the little pan holder (4oz can) to put your jar on. Take the solar cooker tool and place it in the middle like it is in the photo. You can now easily see where your little pan holder (4oz can) should sit.



5. Last you will need to set the front flap. Take your other little 4oz can and push it under the front cardboard flap until the solar cooker tool can slide under it. See Photo.



6. Next place your jar on top of the can. Then, set your clocks! Look at what time it is and add two hours to it. Normally, it will take about two hours for your Sol Peach Dessert to cook. After the two hours are up check to see if the Sol Peach Dessert is done. You will know when it is done because the peach pieces, sugar, and cinnamon will be hot and syrupy.



7. Eat it straight, on top of yogurt, slice of bread, or maybe a tortilla. Enjoy your Sol Peach Dessert! Remember it's hot, so be careful when eating it.

**A Smart Tip for anyone
Solar Cooking!**



8. Save the oven bag and lid you made, they are reusable. You can reuse them until you get holes in the oven bag.

A quick note about cooking meals longer than 2 hours – There are recipes in this book that will take more than the two hours to cook. To cook these recipes up you must know that the sun moves 15 degrees each hour across the sky. To keep your solar cooker in the sun with full light you will need to check and move it to the sun new location. To do this just start at the beginning of **Dialing in Your Solar Cooker** and go through the steps.

Putting your Solar Cooker away

You have been cooking and you need to put your solar cooker away. There is one nice thing about this solar cooker, it folds flat and small. It's really easy after you get the hang of it, here are the simple steps to put it away.



1. Make sure there nothing on top of your solar cooker. Remove everything.



2. Remove the two binder clips, push the sides out, and lift from the middle.



-
3. Next, Fold the main part of your solar cooker together.



4. Put middle piece over the facing foil of the main part of the solar cooker.
-



5. Put binder clips over the side to hold the solar cooker together.
-



6. When you are done there should be no foil sides showing. All ready to go, just pick it up!

Recipes

If you just have build your solar cooker and you don't know what you should cook next after Peach Sol Dessert. Well, here are some simple recipes to get you started. Try one or try them all. There is no limit to what you can cook in a solar cooker. If you have try all of these, grab your favorite cookbook and try the recipes in your solar cooker. The main difference is the cooking times. Solar cooking will take more time but the wait is worth it because your food will be more full of flavor. Also, these types of solar cookers like slow cook meals. When you read through these recipes please note that all the recipe here are being cooked in full sun (no clouds). If you're cooking on a cloudy day you might need to add more time.

Simple sausage sticks

4 normal size sausages
4 Bamboo Skewers

Take the skewers and push them through the middle of each sausages. Keep push the skewer through until the skewer sticking out from the top of sausage. Break off the rest of the skewers so they could the fit into the cooking jar. Cut a small piece from the top of the oven bag to fit over the top of the jar. The goal is to use the piece of oven bag has a lid. Place the small piece of oven bag over jar the top. Screw the ring down on the jar. Cover the jar with your black cloth and put it into the oven bag. Place in Solar Cooker. Cook about 2 hours or until done. Eat them like you would normally eat sausages.

Rice

2 cups of rice
Water as needed

Put the rice into your cooking jar. Add water until the rice is just cover. Cut a small piece from the top of the oven bag to fit over the top of the jar. The goal is to use the piece of oven bag has a lid. Place the small piece of oven bag over jar the top. Screw the ring down on the jar. Cover the jar with the black cloth, and put it into the oven bag. Place in Solar Cooker. Cook about $2\frac{1}{2}$ - 3 hours or until done. The sun moves 15 degree each hour across the sky. To keep your solar cooker in the sun you will need to check it every two hours and move it to the sun new location. To do this just start at the beginning of **Dialing in Your Solar Cooker** and go through the steps.

Cinnamon Apple slices

Two Apples
Cinnamon
Sugar

Cut the apple into thin slices that can fit into your cooking jar. Cover each slice with cinnamon and sugar. Place the apples inside the cooking jar. Cut a small piece from the top of the oven bag to fit over the top of the jar. The goal is to use the piece of oven bag has a lid. Place the small piece of oven bag over jar the top. Screw the ring down on the jar. Cover the jar with black cloth and put in oven bag. Place in Solar Cooker. Make sure to adjust the position of the Solar Cooking when necessary, so it is in full sun. Bake for about two hours, until apples are softened, and are warm all the way through.

Pinto Beans

2 cups of pinto soak the night before
Water as needed

Put the pinto beans into your cooking jar. Add water until the beans are just cover. Cut a small piece from the top of the oven bag to fit over the top of the jar. The goal is to use the piece of oven bag has a lid. Place the small piece of oven bag over jar the top. Screw the ring down on the jar. Cover the jar with the black cloth, and put in oven bag. Place in Solar Cooker. The sun moves 15 degree each hour across the sky. To keep your solar cooker in the sun you will need to check it every two hours and move it to the sun new location. To do this just start at the beginning of **Dialing in Your Solar Cooker** and go through the steps. Cook about 7 1/2 hours or until done.

Corn Bread

1 ¼ cups unbleached white flour
¾ cup whole-grain corn meal
4 tbs. Sugar
5 tsp baking powder
¾ tsp salt
1 egg
1 cup milk
2 Tbs melted butter

Sift together all the dry ingredients. Beat the egg with the milk, when add it to the flour mixture along with the melted butter. Stir well!

Spread the batter into a pan that will fit inside your cooking jar. Don't worry you will enough to more than one small loaf. Follow the directions set and cooking with your solar cooker. Normally, full sun done in about an hour or when light brown around the edges

Potato lunch soup

3 to 4 pre-cooked potatoes
1 medium onion
1 carrot
1 small stalk of celery
a sprig of parsley
1 clove of garlic (if you want)
salt and pepper to taste

Peel and cut the potatoes into small bite size chunks and add the into you cooking jar. Next cut the onion, carrot, celery, parsley, and garlic into small bite size chunks and add the into you cooking jar. Add the desire amount for salt and pepper. Add water until the jar is full. Put lid on cooking jar, shake. Follow the directions set and cooking with your solar cooker. Normally, full sun done in about an two hours. I always mix this mix at 10 in the morning so it done by lunch time.

Solar Spinach soup

½ lb. Of spinach
1 medium to large pre-cooked potato
¼ cup of sliced green onions
2 tbs lemon juice
salt and pepper to taste
¼ cup sour cream (if you want)

Peel and cut the potato into small bite size chunks and add the into you cooking jar. Next cut the onion and spinach into small bite size chunks and add the into you cooking jar. Add the desire amount for salt and pepper. Add water until the jar is full. Put lid on cooking jar, shake. Follow the directions set and cooking with your solar cooker. Normally, full sun done in about two hours. Sour cream sometime taste good or slice of french toast.

Trouble Shooting!

You have set up your solar cooker and nothing works. The oven bag doesn't get hot or did work and now it doesn't. You start to wonder why? That's when this troubleshooting section can help you find the problems you may be have and get you back to solar cooking. The way this section is designed is that common problems are listed with the symptoms and how to fix them. This section is not a catch-all. There might be problems that we don't cover but you might find out about them on your own, that's great. If you want share them, email them to me here (Jed_Wubben@yahoo.com). Just remember that the worse thing is under cooked food, so go out there and try! But remember to wear your sunglasses and protect your skin from the sun. I want you to solar cook but please be safe about it.

Problem: The solar cooker doesn't get hot or cook any food!

Condition: You just build your solar cooker and you have solar cooking all day. The oven bag or the cooking jar is not even hot. The food is as cold as when you put it in the solar cooker.

Possible problems:

1. Check your oven bag for holes.
 - A) Sometimes you will get a bad one. Look at the oven bag for rips and holes, and if it's a new oven bag check the sides to see if it was sealed right.

Fix: A New Oven Bag!

2. Are you using an oven bag?
 - A) Sometimes people will use a normal freezer bag in place of an oven bag. This doesn't work. The oven bags are made from a different type of material than other plastic bags, so you can't use one in place of the other.

Fix: Only use an Oven Bag!

3. Is your foil on the cooker right?
 - A) If you just build the solar cooker, check to see if you put the foil shiny side up. If you didn't you will need to refoil your solar cooker.
 - B) Did anything spill on the foil when you built it? Sometimes the glue can get over the foil and made it lose it shine. Again, this will mean a refoil job.
 - C) Was the foil you used the really really cheap stuff? Not all foil is made the same. You might have the really really cheap foil and it may not shine. If the foil does not focus the light, it will not cook your food.

Fix: You will need to get some different foil and refoil your solar cooker.

4. Is your jars, pans, or pots flat black?
 - A) Talking from experience, I used a polka-dot (Black with white dots) cloth to cover one of my jars to cook. The food would not cook. Even if I got the jar hot the food was always half done. I got myself an all black piece of cloth and have been cooking great since.
 - B) Another problem I ran across was the cloth being pull so thin that you could see the jar. When covering your cooking jars, make sure you have enough cloth to cover and make the totally flat black. Otherwise the other colors will show through. For example, I was cooking Chick-peas (a white colored food) and I

could see them through the black cloth. It was like cooking with the polka-dot cloth again. I used a tighter weave black cloth, more of it, and everything cooked right.

Fix: Get the right black cloth to cover your cooking jars, pans, pots or paint them flat black.

5. Are your angles right?

A) Things like wind, pets, kids and such will move your flaps on the solar cooker. You never want kids or pets playing around your solar cooker but you can't do much about the wind. I check the angles of the flaps every two hours or so. If I find that they have moved a lot, I use rocks to hold the corners.

Fix: Get out your solar cooker tool and check all the angles. Use rocks to hold the corners down if needed.

Problem: The solar cooker doesn't get hot!

Condition: You have cooked before with your solar cooker and you had no problems, why now? Stuff gets hot but the food is not done!!

Possible problems:

1. Are your angles right?

A) Things like wind, pets, kids and such will move your flaps on the solar cooker. You never want kids or pets playing around your solar cooker but you can't do much about the wind. I check the angles of the flaps every two hours or so. If I find that they have moved a lot, I use rocks to hold the corners.

Fix: Get out your solar cooker tool and check all the angles. Use rocks to hold the corners down if needed.

2. Check your oven bag for holes.

A) Sometimes you will get a bad one or you will wear one out. Look at the oven bag for rips, holes, and on the sides if the seal has let go.

Fix: New Oven Bag!

3. Is your foil on the solar cooker dirty?

A) Did anything spill on the foil when you were cooking? Sometimes food can get spill on the solar cooker and make it lose its shine. To get it to work you will need to refoil it.

B) Was the foil you used the really cheap stuff? Not all foil is made the same, if you got the cheap foil and worked great to start. It may not shine after time.

Fix: You will need to get some different foil and refoil your solar cooker.

4. Is the Solar cooker sitting flat?

A) If your solar cooker is not sitting flat, the back panel will not have the right angle. Thus not have the sun rays hit your cooking jar.

B) Plus, not having the solar cooker sitting flat will cause the side flaps to be off, even if you use your solar cooker tool to dial it in.

Fix: You need to move your solar cooker to a flat area. When re-dial in the flaps.

5. Is it a cloud day?

- A) Off and on clouds can mess with your cooking. The worse is 90 plus temperature days with clouds. Your solar cooker may never get hot enough before it gets cover with shade

Fix: Give up, pull out the normal stove, and try solar cooking a different day or wait it out.

- 6. Is your black piece of cloth faded?

- A) The sun will over time fade the color black out of the cloth.

Fix: Find a new piece of black cloth or decide to paint all the cooking jars, pans, pots, a flat black.

Problem: The solar cooker got damage!

Condition: You have cooked with your solar cooker and you had no problems with it.

Something or someone has destroyed, dented, or crushed your solar cooker!

Sadly, there is only one fix to this. Recycle your solar cooker and build yourself a new one. Don't feel bad because these solar cookers are easy to build and cheap to make. Even better all the parts are recyclable!

The End



Just like a movie, a song, or life all things must have a beginning, a middle, and end. If you have reached this chapter you're at the end of this book. The question is what would be at the end of solar cooker book? That answer is simple. What to do with your solar cooker after you're done with it. This last chapter is how to recycle or remake your solar cooker. Why? Three simple reasons:

1. You have used your solar cooker up – the foil doesn't shine and you can't get it to heat your food.
2. Your solar cooker got ruined – you left it out in the rain and cardboard got wet, somebody fell into it and crushed it, you spilled food on it, or it got ripped in the wind. Bottom line, and the cardboard will not hold shape and the thing is junk.
3. You got a different solar cooker and have no use for this one.

If you used your solar cooker so much that it wore out. First you must find out how worn out it is.

Problem 1: The foil doesn't shine. That's an easy fix. Remove the foil from the cardboard return to the foil section in this book and refoil your solar cooker. Be sure to recycle your used foil.

Problem 2: The solar cooker cardboard (the shell) got ruined. The cardboard is main part of the solar cooker. At this point all that is left to do is to recycle the solar cooker. Look it over and see if there is any parts you could reuse (if you plan on building a new solar cooker). After you decide on which parts you plan on reusing, take what's left and pull the foil from the cardboard so it can be recycled. When you take the parts you are not going to use to your local recycler to be remade into new things. Then start at the beginning of this book to build your new solar cooker.

Problem 3: If you have moved on to other things. Let's face it, things can change. Here's what to do: You had a lot of fun with this solar cooker but you decide to buy a solar oven or you have moved to a cloudier part of the world. Your solar cooker just sits there. There are two ways to fix this problem. First, pull your solar cooker apart and recycle the whole thing. Or option two: give your solar cooker away. By giving your solar cooker to someone, you can share the fun of solar cooking. It will warm your heart to see people discover the solar cooking and cooking their whole meal with the sun.

Thank you for reading my book, see you out solar cooking. Just remember the plenty of sun rays for everyone, have a friend over to solar cook! – Jed



Reference section

Here some links to further your solar cooking interest:

KerrCole sustainable living center

<http://www.solarcooking.org/bkerr/default.htm>

Solar Cookers International

<https://www.solarcookers.org/index.php>

Solar Cooking and Food Drying and Solar Stills and Root Cellars

<https://www.builditsolar.com/Projects/Cooking/cooking.htm>

Introduction to solar cooking: How solar cookers work

http://solarcooking.wikia.com/wiki/How_solar_cookers_work

Solar Cooking Archive Discussion Forums

http://solarcooking.org/phpBB2/index_OLD.php

Facebook group: Solar Cooking

<https://www.facebook.com/groups/2442367507>

Facebook group: The Solar Cookers World Network

<https://www.facebook.com/groups/16213904406/>

Big Blue Sun Museum of Solar Cooking

<https://www.youtube.com/@SolarCookingMuseum>

Foil outline:

14 1/2 by 6	14 1/2 by 6	14 1/2 by 6	No Foil
14 1/2 by 12			
14 1/2 by 3			
14 1/2 by 6	No Foil	14 1/2 by 6	14 1/2 by 6